

REMARKS

Summary of the Office Action

In the Office Action, claims 13-19 are pending.

Claims 13-19 stand rejected under 35 U.S.C. §101 as being directed to non-statutory subject matter.

Summary of the Response to the Office Action

Applicant proposes amending claims 13 and 19, and adding new claims 20 and 21. Based on the arguments presented below, claims 13-21 are pending for further consideration.

All Claims are Allowable

In the Office Action, claims 13-19 stand rejected under 35 U.S.C. §101 as being directed to non-statutory subject matter.

Applicant respectfully traverses the rejection of claims 13-19 for the following reasons.

Independent Claim 13

With regard to independent claim 13, Applicant respectfully asserts that the claim as amended provides tangible results and has practical applications. Independent claim 13 as amended provides a method for controlling an electrical network, the method including, “determining components of a space vector of a space vector quantity in an electrical network; determining the length of the space vector of the space vector quantity and its derivative; determining the zeros of said derivative; determining, based on said determined zeros of said derivative, the components of the major and minor semi-axes of the ellipse formed by the space vector of the space vector quantity; determining, based on said determined components of the major and minor semi-axes of the ellipse formed by the space vector, the magnitude of the negative sequence component of the space vector quantity and the location of the negative sequence component of the space vector

quantity in relation to a positive sequence component; and controlling the electrical network by supplying in the electrical network a voltage whose voltage unbalance has been compensated based on said determined magnitude of the negative sequence component of the space vector quantity and said determined location of the negative sequence component of the space vector quantity in relation to a positive sequence component.” Support for these features recited in independent claim 13 can be found at least in paragraphs 3-6, and 13-20 of the originally filed specification, and in originally filed claims 3 and 4.

In the Office Action, “controlling the electrical network based on said determined magnitude of the negative sequence component of the space vector quantity and said determined location of the negative sequence component of the space vector quantity in relation to a positive sequence component” is said to not constitute a sufficient tangible result or disclose a practical application. Applicant respectfully asserts that the entirety of amended independent claim 13 discloses a sufficient tangible result and discloses a practical application. Namely, as amended, claim 13 provides for “supplying in the electrical network a voltage whose voltage unbalance has been compensated,” thereby operating to change the electrical network. As opposed to merely reciting an abstract idea, law of nature, or natural phenomenon, the invention as recited in independent claim 13 affects an electrical network. Therefore, independent claim 13 includes a tangible result with practical application at least in the field of electrical networks.

Based on the arguments presented herein, Applicant respectfully asserts that independent claim 13 is in condition for allowance, and such treatment is earnestly requested. With regard to dependent claims 14-18, Applicant respectfully asserts that claims 14-18 are allowable at least for the reasons presented above for the allowance of independent claim 13 from which they depend, and the additional features recited therein.

Independent Claim 19

With regard to independent claim 19, Applicant respectfully asserts that claim 19, as amended, provides tangible results and has practical applications. Amended

independent claim 19 provides a method for compensating a voltage unbalance in an electrical network, the method including “determining components of a space vector of voltage in an electrical network; determining the length of the space vector of the voltage and its derivative; determining the zeros of said derivative; determining, based on said determined zeros of said derivative, the components of the major and minor semi-axes of the ellipse formed by the space vector of the voltage; determining, based on said determined components of the major and minor semi-axes of the ellipse formed by the space vector, the magnitude of the negative sequence component of the voltage and the location of the negative sequence component of the voltage in relation to a positive sequence component, and supplying in the electrical network a voltage whose voltage unbalance has been compensated based on said determined magnitude of the negative sequence component of the voltage and said determined location of the negative sequence component of the voltage in relation to a positive sequence component.” Support for these features recited in independent claim 19 can be found at least in paragraphs 3 and 5 of the originally filed specification, and in originally filed claims 1 and 3.

In the Office Action, “compensating a voltage unbalance in the electrical network” is stated as not constituting a tangible result and not disclosing a practical application. Applicant respectfully submits that amended claim 19 in its entirety includes a tangible result and discloses a practical application. Namely, as amended, claim 19 provides for “supplying in the electrical network a voltage,” thereby operating to change the electrical network. As opposed to merely reciting an abstract idea, law of nature, or natural phenomenon, the invention as recited in independent claim 19 affects an electrical network. Therefore, independent claim 19 includes a tangible result with practical application at least in the field of electrical networks.

Based on the arguments presented herein, Applicant respectfully asserts that independent claim 19 is in condition for allowance, and such treatment is earnestly requested.

New Independent Claim 20

With regard to new independent claim 20, Applicant respectfully asserts that new claim 20 provides tangible results and has practical applications. Independent claim 20 provides a method for controlling an electrical network, the method including, “determining components of a space vector of a space vector quantity in an electrical network; determining the length of the space vector of the space vector quantity and its derivative; determining the zeros of said derivative; determining, based on said determined zeros of said derivative, the components of the major and minor semi-axes of the ellipse formed by the space vector of the space vector quantity; determining, based on said determined components of the major and minor semi-axes of the ellipse formed by the space vector, the magnitude of the negative sequence component of the space vector quantity and the location of the negative sequence component of the space vector quantity in relation to a positive sequence component; storing data based on said determined magnitude of negative sequence component and said determined location of the negative sequence component of the space vector quantity in relation to a positive sequence component; and controlling the electrical network based on said stored data.”

As discussed above for independent claims 13 and 19, Applicant respectfully asserts that the entirety of new independent claim 13 discloses a sufficient tangible result and discloses a practical application. Namely, a feature of new independent claim 20 is to store the data determined by practicing the claimed method, and subsequently applying the data to control an electrical network. As such, within independent claim 20, the stored data is a tangible result, the practical application of which is to control an electrical network. In other words, the “real world value” of independent claim 20, which would be appreciated by those skilled in the art, is to control/affect an electrical network based upon data supplied by the present invention.

Based on the arguments presented herein, Applicant respectfully asserts that independent claim 20 is in condition for allowance, and such treatment is earnestly requested.

New Independent Claim 21

With regard to new independent claim 21, Applicant respectfully asserts that new claim 21 provides tangible results and has practical applications. Independent claim 21 provides a method for monitoring an electrical network, the method including, “determining components of a space vector of a space vector quantity in an electrical network; determining the length of the space vector of the space vector quantity and its derivative; determining the zeros of said derivative; determining, based on said determined zeros of said derivative, the components of the major and minor semi-axes of the ellipse formed by the space vector of the space vector quantity; determining, based on said determined components of the major and minor semi-axes of the ellipse formed by the space vector, the magnitude of the negative sequence component of the space vector quantity and the location of the negative sequence component of the space vector quantity in relation to a positive sequence component, and displaying a voltage unbalance of the electrical network to a user based on said determined magnitude of the negative sequence component of the space vector quantity and said determined location of the negative sequence component of the space vector quantity in relation to a positive sequence component.”

As discussed above for independent claims 13, 19 and 20, Applicant respectfully asserts that the entirety of new independent claim 21 discloses a sufficient tangible result and discloses a practical application. In the interest of avoiding redundant arguments, the reasons for allowance of new independent claim 21 are not repeated .

CONCLUSION

In view of the foregoing, Applicant respectfully requests the entry of the Amendment to place the application in clear condition for allowance, or in the alternative, in better form for appeal. Applicant also requests the Examiner’s reconsideration and reexamination of the application and the timely allowance of the pending claims. Should the Examiner feel that there are any issues outstanding after consideration of this response, the Examiner is invited to contact Applicant’s undersigned representative to expedite prosecution.

If there are any other fees due in connection with the filing of this response, please charge the fees to our Deposit Account No. 04-2223. If a fee is required for an extension of time under 37 C.F.R. §1.136 not accounted for above, such an extension is requested and the fee should also be charged to our Deposit Account.

Respectfully submitted,

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